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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,601	03/23/2004	Pradeep J. Iyer	6259P005	2458

8791 7590 08/31/2010

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EXAMINER	
RIYAMI, ABDULLA A	

ART UNIT	PAPER NUMBER
2474	

MAIL DATE	DELIVERY MODE
08/31/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/806,601	IYER ET AL.	
	Examiner	Art Unit	
	ABDULLAH RIYAMI	2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05/05/2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13,15-17 and 26-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13,15-17 and 26-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/05/2010 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 13, 15-17 and 26-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 13, 16-17, 26-27, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whelan (US 2005/0003827 A1) in view of Dietrich et al. (US 7301926 B1).

As per claim 13, Whelan discloses a method comprising:

setting a plurality of received signal strength indicator (RSSI) thresholds including a first RSSI threshold and a second RSSI threshold having a value lower than the first RSSI threshold (see paragraph 228, lines 1-8, lower RSSI measurements are retained to determine network coverage area or identify coverage problems, see paragraph 112, line 1, fringe coverage threshold, see paragraph 229, lines 1-5, high signal strength measurements may be censored out from the data set since they may represent measurements made closer to an access point);

measuring a RSSI value for a management message by a mobile station at a plurality of access points detecting management messages (see figure 1, mobile units access points with RSSI measurements, see paragraph 128, lines 105, the mobile units make and record measurements of RSSI as they travel between coverage areas of access points, see paragraph 122, lines 1-17, mobile units make and record measurements of the RSSI from access points, and results transmitted to management server through access points);

placing an address of the station into a list identifying stations located in a potential coverage hole if a RSSI value of the management message is above the second RSSI threshold (see paragraph 240, lines 1-7, the wireless network management server determines the lowest RSSI measurements for each access points coverage area, intended to the RSSI experienced by the mobile unit at the fringes of the network coverage areas, i.e. during fringe RSSI coverage analysis, the low RSSI are used for analysis);

removing the address of the station from the list if one the RSSI value of the management message is above the first RSSI threshold (see paragraph 229, lines 1-5, high signal strength measurements may be censored out from the data set since they may represent measurements made closer to an access point, see paragraph 240, lines 1-7, the wireless network management server determines the lowest RSSI measurements for each access points coverage area, intended to the RSSI experienced by the mobile unit at the fringes of the network coverage areas, i.e. during

fringe RSSI coverage analysis, the low RSSI are used for analysis, see figure 4, management server 10, AP signal files 12, APs, MUs).

Whelan does not expressly disclose measuring a RSSI value for a management message by a plurality of access points detecting the management message originating from a single station.

However, measuring of RSSI values for a management message by a plurality of access points is well known as evidenced by Dietrich.

Dietrich discloses measuring a RSSI value for a management message by a plurality of access points detecting the management message originating from a single station (see column 7, lines 5—65, the access elements include the functionality allowing for detection of the strength of the signal received from the client elements, the 802.11 protocol specifies an optional parameter (RSSI), which is a measure observed at the antenna used to receive the current packet, see column 3, lines 55-65, the management message gets encapsulated with the signal strength, see column 4, lines 15-25, figure 1, block 24, the central control element determines coverage holes, and figure 4, coverage analysis module 80 and stats collector 84, column 10, lines 7-29, stats collector maintains a list for each mobile station identifier and their corresponding signal strengths below a threshold signal level).

Dietrich and Whelan are analogous art since they are from the same field of endeavor of detecting coverage holes in network communication environments.

At the time of the invention it would have been obvious to one of ordinary skill in the art to use Dietrich's technique of measuring a RSSI value for a management

message by a plurality of access points (see column 7, lines 5—65, the access elements include the functionality allowing for detection of the strength of the signal received from the client elements, the 802.11 protocol specifies an optional parameter (RSSI), which is a measure observed at the antenna used to receive the current packet) as a modification in Whelan's teaching of detecting coverage holes by setting a plurality of received signal strength indicator (RSSI) thresholds such as fringe coverage threshold (see paragraph 228, lines 1-8, lower RSSI measurements are retained to determine network coverage area or identify coverage problems, see paragraph 112, line 1, fringe coverage threshold, see paragraph 229, lines 1-5, high signal strength measurements may be censored out from the data set since they may represent measurements made closer to an access point) by requiring access point to measure RSSI instead of mobile units.

The motivation to combine would have been to have a method for real-time analysis of coverage and other performance attributes such as signal strength and signal-noise ratio by having access elements encapsulate packets and tunnel them to a central control element that maintains and analyzes the information contained in the packets to determine coverage of the wireless network environment (see column 2, lines 10-30, Dietrich).

As per claims 16, Whelan discloses initiating an event to mitigate a coverage hole at a location of the station if the station fails to complete association with any of the plurality of access points (see paragraph 230, lines 1-4, signals with a low measurement value may be censored since they are too weak to be significant).

As per claims 17, Whelan discloses initiating an event to mitigate a coverage hole at a location of the station if the station continues to provide management messages with RSSI values below the second RSSI threshold (see paragraph172, mobile units experiencing poor coverage may indicate the need to change access point settings or deploy additional access points, see paragraph 240, lines 1-7, the wireless network management server determines the lowest RSSI measurements for each access points coverage area, intended to the RSSI experienced by the mobile unit at the fringes of the network coverage areas, i.e. during fringe RSSI coverage analysis, the low RSSI are used for analysis).

As per claim 26, Whelan discloses a method comprising:

setting a plurality of received signal strength indicator (RSSI) thresholds including a first RSSI threshold and a second RSSI threshold having a value lower than the first RSSI threshold (see paragraph 228, lines 1-8, lower RSSI measurements are retained to determine network coverage area or identify coverage problems, see paragraph 112, line 1, fringe coverage threshold, see paragraph 229, lines 1-5, high signal strength measurements may be censored out from the data set since they may represent measurements made closer to an access point);

placing an address of the station into a list identifying stations located in a potential coverage hole if a RSSI value measured by a mobile station at a plurality of access points of a wireless message fail to measure the RSSI value above the second RSSI threshold (see figure 1, mobile units access points with RSSI measurements, see paragraph 128, lines 105, the mobile units make and record measurements of RSSI as

they travel between coverage areas of access points, see paragraph 240, lines 1-7, the wireless network management server determines the lowest RSSI measurements for each access points coverage area, intended to the RSSI experienced by the mobile unit at the fringes of the network coverage areas, i.e. during fringe RSSI coverage analysis, the low RSSI are used for analysis);

removing the address of the station from the list if one the RSSI value of the wireless message is above the first RSSI threshold (see paragraph 229, lines 1-5, high signal strength measurements may be censored out from the data set since they may represent measurements made closer to an access point, see paragraph 240, lines 1-7, the wireless network management server determines the lowest RSSI measurements for each access points coverage area, intended to the RSSI experienced by the mobile unit at the fringes of the network coverage areas, i.e. during fringe RSSI coverage analysis, the low RSSI are used for analysis, see figure 4, management server 10, AP signal files 12, APs, MUs).

Whelan does not expressly disclose measuring a RSSI value for a wireless message by a plurality of access points detecting the wireless message originating from the station.

However, measuring of RSSI values for a wireless message by a plurality of access points is well known as evidenced by Dietrich.

Dietrich discloses measuring a RSSI value for a wireless message by a plurality of access points detecting the wireless message originating from the station (see column 7, lines 5—65, the access elements include the functionality allowing for

detection of the strength of the signal received from the client elements, the 802.11 protocol specifies an optional parameter (RSSI), which is a measure observed at the antenna used to receive the current packet, see column 3, lines 55-65, the management message gets encapsulated with the signal strength, see column 4, lines 15-25, figure 1, block 24, the central control element determines coverage holes, and figure 4, coverage analysis module 80 and stats collector 84, column 10, lines 7-29, stats collector maintains a list for each mobile station identifier and their corresponding signal strengths below a threshold signal level).

Dietrich and Whelan are analogous art since they are from the same field of endeavor of detecting coverage holes in network communication environments.

At the time of the invention it would have been obvious to one of ordinary skill in the art to use Dietrich's technique of measuring a RSSI value for a wireless message by a plurality of access points (see column 7, lines 5—65, the access elements include the functionality allowing for detection of the strength of the signal received from the client elements, the 802.11 protocol specifies an optional parameter (RSSI), which is a measure observed at the antenna used to receive the current packet) as a modification in Whelan's teaching of detecting coverage holes by setting a plurality of received signal strength indicator (RSSI) thresholds such as fringe coverage threshold (see paragraph 228, lines 1-8, lower RSSI measurements are retained to determine network coverage area or identify coverage problems, see paragraph 112, line 1, fringe coverage threshold, see paragraph 229, lines 1-5, high signal strength measurements may be

censored out from the data set since they may represent measurements made closer to an access point) by requiring access point to measure RSSI instead of mobile units.

The motivation to combine would have been to have a method for real-time analysis of coverage and other performance attributes such as signal strength and signal-noise ratio by having access elements encapsulate packets and tunnel them to a central control element that maintains and analyzes the information contained in the packets to determine coverage of the wireless network environment (see column 2, lines 10-30, Dietrich).

As per claim 27, Whelan discloses the wireless message is a management message (see paragraph 122, lines 1-17, mobile units make and record measurements of the RSSI from access points, and results transmitted to management server through access points).

As per claims 29, Whelan discloses initiating an event to mitigate a coverage hole at a location of the station if the station fails to complete association with any of the plurality of access points (see paragraph 230, lines 1-4, signals with a low measurement value may be censored since they are too weak to be significant).

As per claims 30, Whelan discloses initiating an event to mitigate a coverage hole at a location of the station if the station continues to provide management messages with RSSI values below the second RSSI threshold (see paragraph172, mobile units experiencing poor coverage may indicate the need to change access point settings or deploy additional access points, see paragraph 240, lines 1-7, the wireless network management server determines the lowest RSSI measurements for each

access points coverage area, intended to the RSSI experienced by the mobile unit at the fringes of the network coverage areas, i.e. during fringe RSSI coverage analysis, the low RSSI are used for analysis).

7. Claims 15 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whelan (US 2005/0003827 A1) in view of Dietrich et al. (US 7301926 B1) and Cameron (US 7079850 B2).

As per claim 15, Whelan and Dietrich et al. teaches of using signal strength power measurements throughout their disclosures. Furthermore, Whelan discloses setting a plurality of received signal strength indicator (RSSI) thresholds including a first RSSI threshold and a second RSSI threshold having a value lower than the first RSSI threshold (see paragraph 228, lines 1-8, lower RSSI measurements are retained to determine network coverage area or identify coverage problems, see paragraph 112, line 1, fringe coverage threshold, see paragraph 229, lines 1-5, high signal strength measurements may be censored out from the data set since they may represent measurements made closer to an access point)

Whelan and Dietrich do not expressly disclose the first RSSI threshold is greater than or equal to 20 dbm0 and the second RSSI threshold is less than 20 dbm0.

Cameron discloses a method wherein the first RSSI threshold is greater than or equal to 20 dbm0 and the second RSSI threshold is less than 20 dbm0 (see column 2, line 60-65, column 3, lines 5-10, column 4, lines 27-45, the central server sets a plurality of thresholds indicating event zones).

Cameron, Whelan and Dietrich are analogous art because they are from the same field of endeavor of transmitting and receiving management frames and measuring and recording their signal strengths.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Cameron's technique for of having thresholds then calculate signal strengths (see column 2, line 60-65, column 3, lines 5-10) in Dietrich's technique of measuring a RSSI value for a wireless message by a plurality of access points (see column 7, lines 5—65, the access elements include the functionality allowing for detection of the strength of the signal received from the client elements, the 802.11 protocol specifies an optional parameter (RSSI), which is a measure observed at the antenna used to receive the current packet) and as a modification in Whelan's teaching of detecting coverage holes by setting a plurality of received signal strength indicator (RSSI) thresholds such as fringe coverage threshold (see paragraph 228, lines 1-8, lower RSSI measurements are retained to determine network coverage area or identify coverage problems

The motivation to combine would have been to have a coverage hole detection method of receiving and measuring signal strengths of mobile stations through access points, and comparing them with set thresholds then determining on or more events based on the comparison which increases the accuracy of the detection (see column 2, lines 60-65, Cameron).

As per claim 28, Whelan and Dietrich et al. teaches of using signal strength power measurements throughout their disclosures. Furthermore, Whelan discloses

setting a plurality of received signal strength indicator (RSSI) thresholds including a first RSSI threshold and a second RSSI threshold having a value lower than the first RSSI threshold (see paragraph 228, lines 1-8, lower RSSI measurements are retained to determine network coverage area or identify coverage problems, see paragraph 112, line 1, fringe coverage threshold, see paragraph 229, lines 1-5, high signal strength measurements may be censored out from the data set since they may represent measurements made closer to an access point)

Whelan and Dietrich do not expressly disclose the first RSSI threshold is greater than or equal to 20 dbm0 and the second RSSI threshold is less than 20 dbm0.

Cameron discloses a method wherein the first RSSI threshold is greater than or equal to 20 dbm0 and the second RSSI threshold is less than 20 dbm0 (see column 2, line 60-65, column 3, lines 5-10, column 4, lines 27-45, the central server sets a plurality of thresholds indicating event zones).

Cameron, Whelan and Dietrich are analogous art because they are from the same field of endeavor of transmitting and receiving management frames and measuring and recording their signal strengths.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Cameron's technique for of having thresholds then calculate signal strengths (see column 2, line 60-65, column 3, lines 5-10) in Dietrich's technique of measuring a RSSI value for a wireless message by a plurality of access points (see column 7, lines 5—65, the access elements include the functionality allowing for detection of the strength of the signal received from the client elements, the 802.11

protocol specifies an optional parameter (RSSI), which is a measure observed at the antenna used to receive the current packet) and as a modification in Whelan's teaching of detecting coverage holes by setting a plurality of received signal strength indicator (RSSI) thresholds such as fringe coverage threshold (see paragraph 228, lines 1-8, lower RSSI measurements are retained to determine network coverage area or identify coverage problems

The motivation to combine would have been to have a coverage hole detection method of receiving and measuring signal strengths of mobile stations through access points, and comparing them with set thresholds then determining on or more events based on the comparison which increases the accuracy of the detection (see column 2, lines 60-65, Cameron).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See form 892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABDULLAH RIYAMI whose telephone number is (571)270-3119. The examiner can normally be reached on Monday through Thursday 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571) 272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2474

/Abdullah Riyami/
Examiner, Art Unit 2474